

# Amphibious Ship Programs 20 MAY 2007

**Amphibious Ship Programs Section POE-50, PP&O** 



## **Amphibious Ship**

- Amphibious Lift Shipbuilding Position
- Programs:
  - LPD 17
  - LHD 8
  - LHA 6
  - Current Ship Inventory
  - LCAC SLEP / SSC / JMAC
  - LCU R
- Other Related: LF Baseline, ALEP & 2007 MEB



# Amphibious Ship - MPF(F) Shipbuilding Position

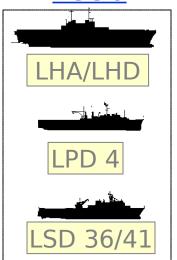
- The Marine Corps operational lift requirement (minimum) is 2.0 amphibious MEB Assault Echelons and 1.0 MPF(F) and Legacy MPSRONs\*.
- A total of 30 Operational Available (Ao) amphibious ships (i.e., 10 Ao LHD-1/LHA-6 Class Ships, 10 Ao LPD-17 Class Ships, and 10 Ao LSD 41/49 Class Ships) are required to support the 2 MEB Assault Echelon forcible entry force directed by the Strategic Planning Guidance (SPG). The actual number of fleet ships must be larger than 10-10-10, since not all ships will be operationally available at any one time.
- MPF(F) is not assault echelon shipping
  - MPF(F) does not have the same level II survivability as AE ships
  - MPF(F), in combination with necessary sea shield and assault echelon ATF assets, is capable of conducting/assisting with operations in semi- or non-permissive situations

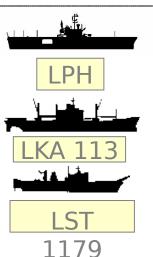
## **Amphibious Fleet** ormation

**Operations from 1-5 miles off beach** 

Based Operations from 25+ miles

**1990** 





**First Class Warships** 

Enable Operational
Maneuver From The
Sea and Ship To
Objective Maneuve

#### **Enhanced Capabilities:**

- Seabasing Platforms
- · LCAC, EFV
- MV-22, JSF
- Improved Self-Defense
- Improved C4I

**2015** 



LHA/LHD/LHA(R)







# Comparison With Existing Amphibs

LHD1

LHA

LENGTH (FT) 570 684 844 820 105 84 106 106 BEAM (FT) 26.7 23 26.7 **FULL LOAD DRAFT (FT)** 23 16,905 39,400 40,538 **FULL LOAD DISPL. (LT)** 24.900 PROPULSION PLANT STEAM \* DIESEL **STEAM STEAM** 22 21 22 22 **SUSTAINED SPEED (KTS** VEHICLE SQUARE (FT<sup>2</sup>) 25K 11.8K 20.9K 25.4K 38.3K 125K 105.9K **CARGO VOLUME (FT3)** 34K TROOPS 1,687 1,710 720 788 **LCAC** 3 1 1 **LANDING SPOTS** 9 10 4 2 420 1,204 1,247 **CREW** 361 **18 BEDs/ 60Rs** 24 BEDs/2 ORs MEDICAL CAPABILITY 12 BEDs/1 OR 64 BEDs/6 ORs 9,000 MOGAS CAPABILITY (GAL) 0 3,000\*\* 22,300

LPD 4

**LPD 17** 

<sup>•</sup>LHD 8 will have gas turbine propulsion.

<sup>•</sup>LPD-17 MOGAS reduced to 3000



## LPD 17 Ship Snapshot

- Test and Trial Milestones
  - -Delivery
  - -Crew Move Aboard
  - -Sail Away Trial
  - -Sail Away
- Commissioning
- Transit to Homeport
- Fitting Out Availability



SAN ANTONIO (LPD-17)



**NEW ORLEANS (LPD-18)** 



### LPD 17 Class Ship

LPD 19, LPD 22, LPD 23, and LHD8 were the amphibs affected by the union strike (Ingalls/Pascagoula ships); LPD 20 and other Avondale ships were not affected.

- USS SAN ANTONIO (LPD-17). Delivered, Commissioned and at homeport.
  - PSA during summer 2007.
  - Conduct Opeval during late 2007/early 2008.
  - Deploy 2008
- USS NEW ORLEANS (LPD-18). Delivered, Commissioned and at homeport.
  - To conduct fitting out availability this Spring/Summer.
  - To commence Post Delivery Test and Trials afterwards.
- USS MESA VERDE (LPD-19). Delivery and commissioning in 2007.
  - Commissioning Site: commissioning site has been approved: Panama City, FL.
- USS GREENBAY (LPD-20) and USS NEW YORK (LPD 21) under construction with tentative FY08 delivery dates.
- Contract for LPDs 22 / 23 (with options for 24/25) awarded June 2006.
- Contract option for the construction of LPD 24 was exercised and the procurement of long lead time material for LPD 25 in Nov 06.

#### **Post Delivery Test & Trials**

- First of Class Trials/Certifications
- Combat System Ship Qualification Testing (CSSQT)
- Developmental Testing (DT)
- Crew Basic Phase Training
- Final Contract Trial

- OPEVAL
- Total Ship Survivability Test
- LCAC Interface Trials
- Post Shakedown Availability
- Intermediate/Advance Phase **7**rai



## LPD 17 Class Hurricane Impact

Hurricane impacted NGSS shipyards

Ingalls: Facility flooded 5-10 ft of water

Localized flooding

Significant wind damage

**Electrical power grid damaged** 

**Core functions destroyed** 

Lost material

**Avondale:** 

Minor wind damage Major workforce displacement

- Productivity disruption, schedule delays, and loss of skilled labor driving increased labor and overhead costs
  - Electricians, Pipefitters, and Machinery trades have greatest impact
- Workforce
  - Wage competition with FEMA/other business sectors
  - Nearing 70% return to date
  - NGSS assessing options to maintain workforce
- NGSS has provided the Navy an initial assessment of impact to ship construction schedules across all NGSS facilities
  - Navy is currently reviewing this assessment
    - Near term focus on setting schedules for LPD 18 and 19



## Katrina Shipbuilding Impact

LPD HULL	PRE-STORM DELIVERY	POST-STORM DELIVERY
LPD-17	07/05	NO IMPACT
LPD-18	1/06	12/06
LPD-19	03/06	03/07
LPD-20	10/06	12/07
LPD-21	8/07	04/08
LPD-22-25	NOT PROGRAMMED	NO IMPACT
LHD-8	7/07	Mid-08

LPD-18 Commissioned on 10 Mar 07 in New Orleans, LA.

LPD-19 Proposed Commissioning on 30 Jun 07 in Panama City, FL.



### LHD-8 Makin Island

- LHD 8 will replace LHA-3.
- Start of Construction: 22 May 03
- Christening Ceremony 19 Aug 2006
- Delivers mid-2008; construction schedule affected by Katrina.

 Major changes: Elimination of steam through the introduction of gas turbine

propulsion and all-





### LHA 6



- The last of the five TARAWA class LHAs reach the end of it's service life in 2015\*
- LHD-8 will replace LHA-3 upon delivery in 2008
- LHA(R) program replaces the remaining 4 LHAs.

Concepts and Programs "Refining the program of record to a more affordable platform with maximum warfighting capability."
rent Long Range Shipbuilding Plan calls for it to remain in service until 2018



## Capability Comparison LHA vs. LHD vs. LHA(R)

Requirements	LHA	LHD	LHA(R) ( <b>LHA 6)</b>
Aviation: JSF Aviation Maint (MV22)	0	19	23
	Limited	Limited	Full (2 MV22)
•	109	125	160
	25.4	20.9	11.6
	1,713	1,686	1,686
Well Deck Spots (LCAC)  JP-5 (K gallons)	1	3	0
	400	617	1,300
Sustained Speed (kts) Survivability (armor)	22	22	22
	None	Limited	Add'l

**CAPABILITY VALIDATED BY JROC ON FEBRUARY 8, 2005** 

JROCM validated revised aviation, survivability and force protection KPPs on December 19, 2005



# Amphibs East Coast /Atlantic

- SAIPAN (LHA 2) Decomm 27 Apr 07
- NASSAU (LHA 4)
- WASP (LHD 1)
- KEARSARGE (LHD 3)
- BATAAN (LHD 5)
- IWO JIMA (LHD 7)
- AUSTIN (LPD 4) Decomm 27 Sep 06
- SHREVEPORT (LPD 12) Decomm 28 Sep 07
- NASHVILLE (LPD 13)
- TRENTON (LPD 14)
   Decomm 17 Jan 07
- PONCE (LPD 15)
- SAN ANTONIO (LPD 17)
- WHIDBEY ISLAND (LSD 41)
- GUNSTON HALL (LSD 44)
- ASHLAND (LSD 48)
- CARTER HALL (LSD 50)
- OAK HILL (LSD 51)



# Amphibs West Coast/Pacific

TARAWA (LHA 1)

**Decomm FY09** 

- PELELIU (LHA 5)
- ESSEX (LHD 2) \*
- BOXER (LHD 4)
- BONHOMME RICHARD (LHD 6)
- OGDEN (LPD 5) Decomm Feb 07
- CLEVELAND (LPD 7) Decomm FY08
- DUBUQUE (LPD 8) Decomm FY12
- DENVER (LPD 9) Decomm FY11
- JUNEAU (LPD 10) \* Decomm FY09
- USS NEW ORLEANS (LPD 18)
- GERMANTOWN (LSD 42)
- FT MCHENRY (LSD 43) \*
- COMSTOCK (LSD 45)
- TORTUGA (LSD 46) \*
- RUSHMORE (LSD 47)
- HARPERS FERRY (LSD 49)
- PEARL HARBOR (LSD 52)



## Shipbuilding/Procurement

LHD 8 MAKIN ISLAND Deliver FY08

LPD 19 MESA VERDE Deliver Summer 07

LPD 20 GREEN BAY Deliver Dec 07

LPD 21 NEW YORK Deliver Apr 08

LPD 22 SAN DIEGO Deliver Jun 10

LPD 23 ANCHORAGE Deliver Oct 10

LPD 24 ARLINGTON Deliver FY 11

LPD 25 SOMERSET Deliver FY 11



# Program Overview LCAC SLEP

#### BUOYANCY BOX REFURBISHMENT

Addresses Corrosion

#### Problem

- 20-Year Service Life
- Incorporates Hull Upgrades and

#### ROTATING MACHINERY REFURBISHMENT

- Extends Useful Life of Equipment
- Reduces Maintenance

## **ENHANCED ENGINES**

- Provides Additional Power
- Reduces Fuel Consumption
- Reduces Maintenance

#### **C4N REPLACEMENT**

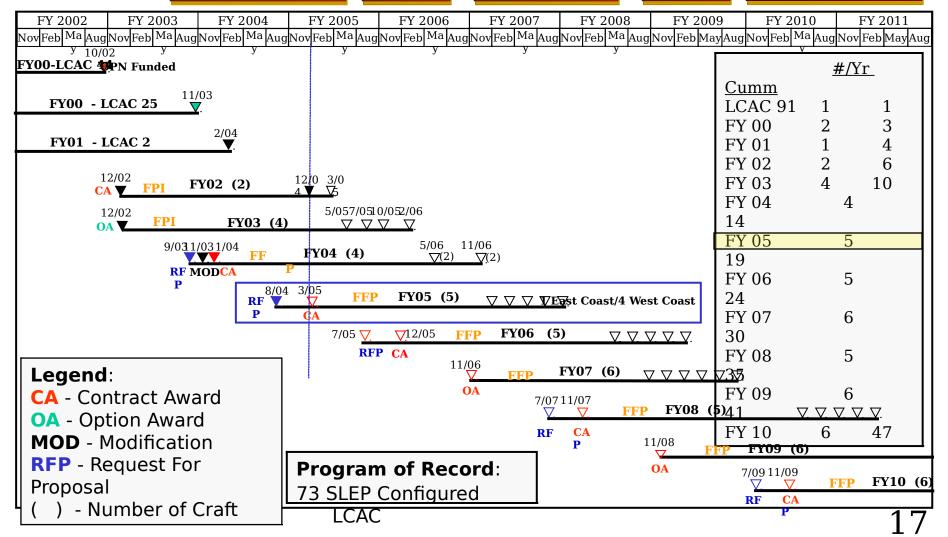
- Introduces Open Architecture
- Introduces Modern COTS Equipment
- Provides Precision Navigation
- Provides Common Tactical Picture
- Provides Comm Suite Interoperability

#### **DEEP SKIRT**

- Reduces Drag
- Increases Performance Envelope
- Reduces Maintenance
- Increases Obstacle

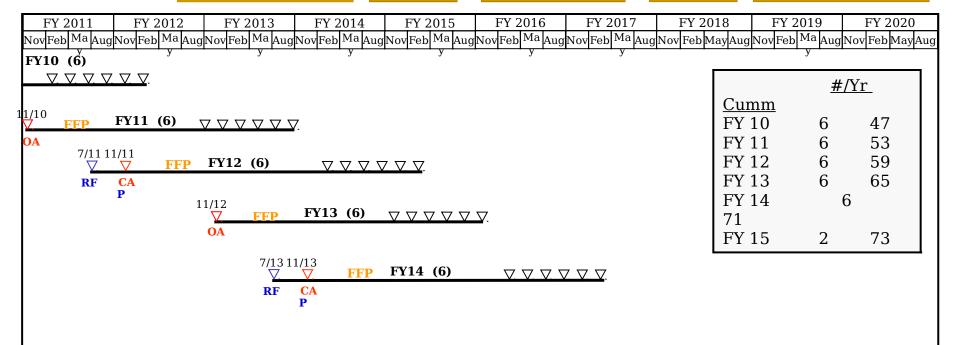


# LCAC SLEP Planning, Installation, and Delivery





# LCAC SLEP Planning, Installation, and Delivery



#### Legend:

**CA** - Contract Award

OA - Option Award

**MOD** - Modification

RFP - Request For

Proposal

) - Number of Craft

#### **Program of Record:**

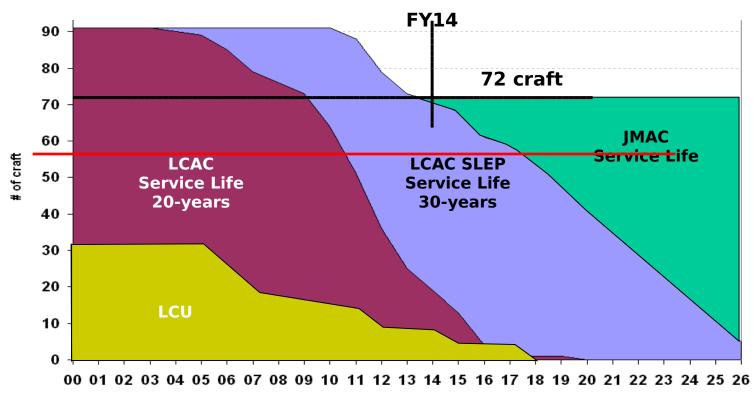
73 SLEP Configured

**LCAC** 

# SHITT OF THE NAME OF THE SHAPE OF THE SHAPE

# Ship to Shore Connector (Joint Maritime Assault Craft)

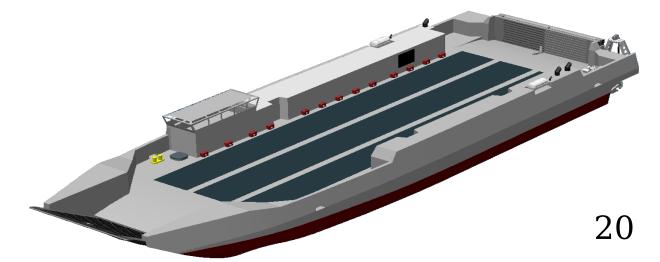
- JMAC required to fill future gaps that the end of LCAC and LCAC SLEP Service Life will create
  - Key to future Joint surface assault and sustainment





## LCU (R)

- Current craft 12 24 yrs past ESL
- Performance and readiness degrading with age
- Current LCU wastes Well Deck space
- Current LCU is subject to broaching due to poor maneuverability
- Communications suite outdated and noninteroperable





# LANDING FORCE OFFICE SPACES BACKGROUND

- APR 04 MARFORLANT SUBMITTED LHD C2I SPACE CONFIG CONF
- OCT 05 SCD-187 APPROVED TO ADDRESS MARFORLANT C2I RECOM
- APR 06 26 MEU MAGTF SPACE UPGRADES FOR BATAAN ESG
- JUN 06 MARFORCOM ENDORSEMENT OF 26 MEU SPACE UPGRADES
- AUG 06 22 MEU ASSESSMENT OF AMPHIB SHIPPING

DEMAND SIGNALS FOR PROCESS



# DEVELOPING THE BASELINE

- IN ORDER TO AFFECT CHANGES / MODIFICATIONS, A UNIFORM STANDARD MUST BE DEVELOPED AND SCD'S SUBMITTED.
  - Develop an Interim Policy for approval of ship modification/change requests.
  - Staff the Baseline.
  - Incorporate Baseline into SCDs.
  - Provide a Process on how to incorporate future required capabilities into SCDs.

    THE WAY AHEAD WILL INCORPORATE SCD'S FOR EACH SHIP CLASS



## AMPHIBIOUS LIFT ENHANCEMENT PROGRAM (ALEP)

- ALEP established in 1994 to address Congressional concern over USN inability to meet USMC amphib lift requirement of 3.0 MEB, fiscally constrained to 2.5 MEB
- Designed to fill gap in vehicle square until the LPD-17 class delivered
- Original ALEP Inventory was 11 Amphibious ships:
  - 2 x LKA's with MSC crew, surge in five days (ROS 5)
  - 3 x LKA's and 4 x LST's in mobility category B (180 days)
  - 2 x LST's, one per coast assigned to Naval Reserve Force
    - Manning plan: 5 LKA reserve crews rotated training on the two ROS 5 LKA's. Each NRF LST required three reserve crews.



### **2007 MEB**

Purpose of the MEB is to develop a current echeloned lift estimate that identifies the assault

force capabilities required for the AE within the

first five days (D+5) and identifies the assault

follow-on echelon that arrives NET D+5.

## **Amphibious Programs**



#### Expeditionary Warfare Ship Inventory (POM08 Data + FY07 30 Yr Shipbuilding Plan)

Notes:

Legend 1 Delivery 1 West Coast

X Decommissioning 1 East Coast

(note 1) PR07 Plan 1 FDNF

Procurement year 1 TBD

End of service life (OPNAV N8 Memo Sep 98)

Totals for ship classes based on number of ships in service at end of fiscal year.
 POM 08 Change

 MPF(F) LHD to be transferred from Active Amphilo fleet in 2021 (Specific hull not official, LHD 5 notional placeholder)

Fiscal Year	06	07	06	09	10	11	12	13	14	15	16	-17	18	19	20	21	22	23	24	25	26	27	28	29	, 30	31	32	33	34	36
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4 NASSAU	- 1	1	-1	4	4	4	-1	-	1	x																				
5 PELELIU	1	1	1	1	1	1	1	1	-1	4	- 1	1	Х																	
6 LHA		P				-	1	1	-1	1	-1	-1	1	-1	1	1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1	1	1	-1
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7 IWO JIMA	1	1.1	1.1	1	1	11	1	1	- 1	1	- 1	- 1	1	1	1.1	1	1	- 1	1	1 1	1 1	- 1	- 1	1	1.	1	.1	. 1	1.	1
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51 OAK HILL			-	-		-		-	4												1	-	1				-	X		<i>i</i>
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LSD(X) Delivery																		1	1	2	3	4	5	6	7	8	9	10	11	12
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Total LSD	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	-	112			12		
Total Amphibious Ships	33	31	33	31	31	33	33	32	32	31	31	31	30	30	• 30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30

Totals for ship classes based on number of ships in service at end of fiscal year.

2. POM 08 Change

Notes:

3. MPF(F) LHD to be transferred from Active Amphilo fleet in 2021

(Specific hull not official, LHD 5 notional placeholder)

		End of	f servic	oe life (	OPNA	V NB N	temo s	3ep 98)	1																					
Fiscal Year	06	07	96	99	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
MPF (Future)	0	- 0	U	0	U	0	т.	3	- 5		10	10	- 11	111	- 11	- 11	12	12	12	12	12	12	12	12	12	12	12	12	12	12
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MPF(F) LHD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1 MHF(F) LHD																	1	-	1	-	1	1	1	-	1	1	1	7	-	1
MPF(F) LMSR	0	0	0	0	0	0	0	1	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
T MPF(F) LMSR	200000				. P			1	1	1	1	1	1	1	1	1	-	,	1	1	1	1	1	1	1	1		1	1	1
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3 MPF(F) LMSR	00000				i		P			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MPF(F) T-AKE	0	0	0	0	0	0	1	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
1 MPF(F) T-AKE	1000000			Р			1	1	. 1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	- 1
2 MPF(F) T-AKE					Р			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	_1_	1	1
3 MPF(F) T-AKE	10000					Р			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MLP	0	0	0	0	0	0	0	0		2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
1 MLP	100000			. "	.					1.3	1	1	1	1	1	1	1	- 1	1	- 1	1	1	1	1	1	1		1	1	- 1
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			- 22		- 22	- 20		- 20	- 22	1.44	1	- 1	- 1	1 22	1	1	1	- 1	10	- 10	1	1	- 1	-1	1	1	1	- 1	1	-1
LEGACY	16	16	16	16	16	16	16	16	15	15	16	16	16	16	16	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
1 LEGACY SQDN (MPF) 2 LEGACY SQDN (MPF)	1	. 1	1	1	1	- 1	1		1	1	1	1	1	1	1	1		-			1	1	1	1	1		- 1			
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LCAC(X)	D.E.	02	uz.	U.	OZ.	- Cu	CU	72	7.0	-00	3	10	14	18	22	26	30	34	38	42	46	50	54	58	62	62	62	62	62	62
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MINE WARFARE SHIPS	22	18	14	14	14			14	14	14	14	-		8	- 6	4	2	0	0	0		0	0	0	0	0	0	0	0	0
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51 OSPREY	Х																													
52 HERON	1	х		_		_																			_					
53 PELICAN	1	х																												
54 ROBIN	X			_		_																			_					
55 ORIOLE	X																													
56 KINFISHER	- 1	1	X																					_	_					
57 CORMORANT	1	1	X								•																			
58 BLACK HAWK	1	1	X																						_					
59 FALCON	X																													
60 CARDINAL	- 1	X																												
61 RAVEN	1	X			ı																									
62 SHRIKE	1	1	X																											
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2 DEFENDER	1	1	1	1	1	-1	1	1	_1_	1	1	Х							_			_		_	_		-	_		
3 SENTRY	1	1	1	1	1 1	- 1	1	- 1	1	1	1	- 1	X																	
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5 GUARDIAN	1	1	1	1	1 :	1	1	1	1	1	1	1	1	X																
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7 PATRIOT	1	1 1	1 1	1	1	- 1	1	1	1	1	1	1	1	1	X															
8 SCOUT	1	1	1	1:	1	1	1	1	1	1	1	1	1 -	1	X															
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11 GLADIATOR	1	1	<u> </u>	1			- 4	- 4	4	1	4	4	4	1	4	^	х													
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HSV	0	ò	Ó	ò	ė:	1	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	-	3	3	3
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2 JHSV 3 JHSV					Р	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1